

In the claims: Please change the claims as indicated.

1. (Currently amended) A method of encoding a sequence of bits for transmission via a transmission channel as symbols consisting of a plurality of bits, some of the bit positions of the symbols having a higher bit error rate than other bit positions, the method comprising:

a) a step ~~(31, 32, 41, 42)~~ of providing a plurality of sequences of bits using a convolutional encoder ~~(31, 41)~~, in response to a sequence of input bits, each sequence of bits being defined by a predetermined generator polynomial having a predetermined level of sensitivity to puncturing; and

b) a step ~~(33, 44)~~ of mapping the bits of each sequence of bits to symbol positions based on the level of sensitivity of the generator polynomial defining the sequence of bits.

2. (Currently amended) A method of decoding a sequence of bits encoded for transmission via a transmission channel as symbols consisting of a plurality of bits, some of the bit positions of the symbols having a higher bit error rate than other bit positions, the method comprising:

a) a step ~~(36, 45)~~, responsive to received symbols, of demapping the symbols back to a plurality of sequences of bits, each sequence of bits being defined by a predetermined generator polynomial having a predetermined level of sensitivity to puncturing, the demapping based on the level of sensitivity of a generator polynomial defining a respective one of the sequences of bits; and

b) a step ~~(37, 38, 47, 48)~~, responsive to the plurality of sequences of bits, of providing outputs bits using a convolutional decoder ~~(38-48)~~.

3. (Currently amended) A method as in claim 1, further comprising a step-(34, 43) of interleaving.

4. (Currently amended) A method as in claim 2, further comprising a step-(35, 46) of deinterleaving.

5. (Currently amended) A method as in claim 3, wherein the interleaving-(43) is bit interleaving, and wherein the step-(44) of providing a mapping is performed after the step-(43) of bit interleaving.

6. (Currently amended) A method as in claim 4, wherein the deinterleaving-(46) is bit deinterleaving, and wherein the step-(45) of demapping is performed before the step-(46) of bit deinterleaving.

7. (Currently amended) A method as in claim 3, wherein the interleaving-(34) is symbol interleaving, and wherein the step-(33) of providing a mapping is performed before the step-(34) of symbol interleaving.

8. (Currently amended) A method as in claim 4, wherein the deinterleaving-(35) is symbol deinterleaving, and wherein the step-(36) of demapping is performed after the step-(35) of symbol deinterleaving.

9. (Currently amended) A method as in claim 3, wherein, in the step-(31, 32, 41, 42) of providing a plurality of sequences of bits using a convolutional encoder-(31, 41), at least one of the sequences of bits are punctured-(32, 42) after using the convolutional encoder-(31, 41) in order to fit the at least one sequence of bits into a transmission channel.

10. (Currently amended) A method as in claim 9, wherein the amount of puncturing ~~(32, 42)~~ of each sequence depends on the level of sensitivity of the polynomial defining the sequence.

11. (Currently amended) A method as in claim 1, wherein, in the step ~~(31, 32, 41, 42)~~ of providing a plurality of sequences of bits using a convolutional encoder ~~(31, 41)~~, at least one of the sequences of bits are punctured ~~(32, 42)~~ after using the convolutional encoder ~~(31, 41)~~ in order to fit the at least one sequence of bits into a transmission channel.

12. (Currently amended) A method as in claim 1, wherein, in the step ~~(37, 38, 47, 48)~~ of providing output bits from the plurality of sequences of bits, punctured bits are inserted ~~(37, 47)~~ into at least one of the sequences of bits before using the convolutional decoder ~~(38, 48)~~.

13. (Currently amended) A method as in claim 11, further comprising a step ~~(34, 43)~~ of interleaving.

14. (Currently amended) A method as in claim 13, wherein the interleaving ~~(43)~~ is bit interleaving, and wherein the step ~~(44)~~ of providing a mapping is performed after the step ~~(43)~~ of bit interleaving.

15. (Currently amended) A method as in claim 13, wherein the interleaving ~~(34)~~ is symbol interleaving, and wherein the step ~~(33)~~ of providing a mapping is performed before the step ~~(34)~~ of symbol interleaving.

16. (Currently amended) A method as in claim 11, wherein the amount of puncturing ~~(32, 42)~~ of each sequence depends on the level of sensitivity of the polynomial defining the sequence.

17. (Currently amended) A transmitting apparatus for encoding a sequence of bits for transmission via a transmission channel as symbols consisting of a plurality of bits, some of the bit positions of the symbols having a higher bit error rate than other bit positions, the apparatus comprising:

- a) means—~~(31, 32, 41, 42)~~ for providing a plurality of sequences of bits using a convolutional encoder—~~(31, 41)~~, in response to a sequence of input bits, each sequence of bits being defined by a predetermined generator polynomial having a predetermined level of sensitivity to puncturing; and
- b) means—~~(33, 44)~~ for mapping the bits of each sequence of bits to symbol positions based on the level of sensitivity of the generator polynomial defining the sequence of bits.

18. (Currently amended) A receiving apparatus for decoding a sequence of bits encoded for transmission via a transmission channel as symbols consisting of a plurality of bits, some of the bit positions of the symbols having a higher bit error rate than other bit positions, the apparatus comprising:

- a) means—~~(36, 45)~~, responsive to received symbols, for demapping the symbols back to a plurality of sequences of bits, each sequence of bits being defined by a predetermined generator polynomial having a predetermined level of sensitivity to puncturing, the demapping based on the level of sensitivity of a generator polynomial defining a respective one of the sequences of bits; and
- b) means—~~(37, 38, 47, 48)~~, responsive to the plurality of sequences of bits, for providing outputs bits using a convolutional decoder—~~(38-48)~~.

19. (Currently amended) A transmitting apparatus as in claim

17, further comprising means—(34, 43) for interleaving.

20. (Currently amended) A receiving apparatus as in claim 18, further comprising means—(35, 46) for deinterleaving.

21. (Currently amended) A transmitting apparatus as in claim 19, wherein the means—(43) for interleaving performs bit interleaving, and wherein the means—(44) for mapping is operative after the means—(43) for interleaving.

22. (Currently amended) A receiving apparatus as in claim 20, wherein the means—(46) for deinterleaving is bit deinterleaving, and wherein the means—(45) for demapping is performed before the step—(46) of bit deinterleaving.

23. (Currently amended) A transmitting apparatus as in claim 19, wherein the means—(34) for interleaving performs symbol interleaving, and wherein the means—(33) for providing a mapping is operative before the means—(34) for interleaving.

24. (Currently amended) A receiving apparatus as in claim 20, wherein the means—(35) for deinterleaving performs symbol deinterleaving, and wherein the means—(36) for demapping is operative after the means—(35) for deinterleaving.

25. (Currently amended) A transmitting apparatus as in claim 19, wherein, the means—(31, 32, 41, 42) for providing a plurality of sequences of bits using a convolutional encoder—(31, 41) includes, after the convolutional encoder—(31, 41), means—(32, 42) for puncturing at least one of the sequences of bits in order to fit the at least one sequence of bits into a transmission channel.

26. (Currently amended) A transmitting apparatus as in claim 25, wherein the means for puncturing ~~(32, 42)~~ provides puncturing of each sequence in an amount that depends on the level of sensitivity of the polynomial defining the sequence.

27. (Currently amended) A transmitting apparatus as in claim 17, wherein, the means ~~(31, 32, 41, 42)~~ for providing a plurality of sequences of bits using a convolutional encoder ~~(31, 41)~~ includes, after the convolutional encoder ~~(31, 41)~~, means ~~(32, 42)~~ for puncturing at least one of the sequences of bits in order to fit the at least one sequence of bits into a transmission channel.

28. (Currently amended) A receiving apparatus as in claim 18, wherein, the means ~~(37, 38, 47, 48)~~ for providing output bits using a convolutional decoder ~~(38, 48)~~ includes, before the convolutional decoder ~~(38, 48)~~, means ~~(37, 47)~~ for inserting bits into at least one of the sequences of bits.

29. (Currently amended) A transmitting apparatus as in claim 27, further comprising means ~~(34, 43)~~ for interleaving.

30. (Currently amended) A transmitting apparatus as in claim 29, wherein the means ~~(43)~~ for interleaving performs bit interleaving, and wherein the means ~~(44)~~ for providing a mapping is operative after the means ~~(43)~~ for interleaving.

31. (Currently amended) A transmitting apparatus as in claim 29, wherein the means ~~(34)~~ for interleaving performs symbol interleaving, and wherein the means ~~(33)~~ for providing a mapping is operative before the means ~~(34)~~ for interleaving.

32. (Currently amended) A transmitting apparatus as in claim

27, wherein the means for puncturing—(32, 42) provides puncturing |
of each sequence in an amount that depends on the level of
sensitivity of the polynomial defining the sequence.

33. (Original) A system for wireless communication, comprising
a base station and a mobile station, wherein either the base
station or the mobile station includes a transmitting apparatus
as claimed in claim 17.

34. (Original) A system for wireless communication, comprising
a base station and a mobile station, wherein either the base
station or the mobile station includes a receiving apparatus as
claimed in claim 18.